24. (Once Amended) The apparatus of claim 23, further comprising a means for retrieving the first set of patient data from an image database.

25. (Once amended) The apparatus of claim 24, further comprising a means for retrieving the second set of patient data from a radiology information system.

26. (Once Amended) The apparatus of claim 23, wherein the patient context includes the means for identifying a patient.

27. (Once Amended) The apparatus of claim 23, wherein the means for providing includes a means for generating an event based on the patient context and providing the event to the second application.

28. (Once Amended) The apparatus of claim 27, further comprising a means for converting the event from a first object model to a second object model and a means for providing the converted event to the second application.

29. (Once Amended) The apparatus of claim 23, wherein the second application is selected from the group consisting of a case signout application, a report entry application, an order detailing application, and an order viewer application.

30. (Once Amended) The apparatus of claim 23, further comprising a means for receiving an operator input and generating the patient context for the patient in response to the operator input.

31. (Once Amended) The apparatus of claim 23, wherein the second set of patient data includes a means for providing patient examination information.

REMARKS

Entry of the above amendments is respectfully requested. Claims 1, 14 and 23-31 have been amended. Claims 1-31 are pending in the application.

Claims 23 and 26 have been amended to correct a typographical error. Claims 24-31 have been amended to correctly refer to the apparatus of claim 23. These amendments are not narrowing amendments. Claims 1, 14 and 23 have been amended to further define the invention.

The specification has been amended to correct typographical errors and to properly correspond to the figures. Accordingly, reference numbers have been added and deleted to correspond to the Figures 1-6. No new matter has been added to the specification.

Figures 1-6 have been amended to correspond to the specification and to add missing reference numbers. By way of an accompanying request to approve drawing changes, applicants hereby propose to revise Figure 1 to remove the label "PathSpeed Extend Workflow." Applicants propose to revise Figure 2 to remove the label "PathSpeed Extend" and amend block 30 to read "PACS Application." Applicants propose to revise Figure 3 to remove the label "PathSpeed Extend Framework," to add the reference number 30 to refer to the block labeled "PathSpeed Application", to delete the reference number 14, to amend block 30 to read "PACS Application", to amend block 82 to read "PACS CORBA Server," and to amend block 84 to read "PACS Event Generator." Applicants propose to revise Figure 4 to add reference number 12 to refer to the block labeled "Patient Context Creation," to remove the term "PathSpeed" and replace it with the term "PACS" and to remove the term "PathSpeed Extend." Applicants propose to revise Figure 5 to add reference number 30 to refer to the block labeled "PathSpeed Application" and to replace the term "PathSpeed" in the same block with the term "PACS." Applicants propose to revise Figure 6 to add reference number 16 to refer to the image data and to amend block 30 to read "PACS Application." Applicants submit that all proposed drawing changes are supported by the specification and no new matter has been added.

Favorable reconsideration and allowance of the application is respectfully requested in light of the foregoing amendments and the remarks which follow.

1. Claim Rejections - 35 U.S.C. § 103(a)

Claims 1-31 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Rock et al. ("Rock"; U.S. Pat. No. 6,032,120) in view of Wong et al. ("Wong"; U.S. Pat. No. 6,260,021 B1).

A. Allowability of Independent Claim 1 and Dependent Claims 2-13

Claim 1 has been amended to further define the invention. The invention as defined by amended claim 1 requires, among other elements, a workstation coupled to a display unit and configured to operate a first application and a second application. The first application is configured to generate a patient context and to provide the patient context to the second application. The second application is configured to display patient textual data using the second application based on the patient context. As discussed in the specification, patient context information is shared between the first application and the second application operating on the workstation. The second application is configured to display patient data based on the patient context provided by the first application. Accordingly, the patient information system allows multiple applications residing on the same workstation or workstation network to exchange patient context data.

In contrast, Rock does not teach or suggest a workstation configured to operate a first application and a second application where the first application generates a patient context and provides the patient context to the second application that is configured to display patient data based on the patient context. Rather, Rock discloses a client application that sends a request to a server application to send digital medical image(s) associated with a medical study to the client application. (Rock, col. 1, lines 48-62). The client application is used to display the digital medical image(s). The client application is on a client device and the server application is on a server device. The server application *locates* the requested medical study and *sends* a digital medical image to the client application which is used to display the digital medical image. (Rock, col. 2, lines 45-67).

Further, Wong also does not teach or suggest a workstation configured to operate a first application and a second application where the first application generates a patient context and provides the patient context to the second application that is configured to display patient data based on the patient context. While Wong does disclose a workstation in the

context of a system and method for distributing medical images, Wong does not teach or suggest sharing a patient context between a first application and a second application residing on the same workstation where the second application is configured to display patient data based on the patient context. Therefore, neither Rock nor Wong, either separately or together teaches or suggests sharing a patient context between a first application and a second application residing on the same workstation where the second application is configured to display patient data based on the patient context. Accordingly, amended claim 1 is allowable over Rock in view of Wong.

Claims 2-13 depend from amended claim 1 and incorporate all of the limitations of amended claim 1 and are therefore allowable over Rock in view of Wong for , among other things, the same reasons as given above with respect to amended claim 1.

Accordingly, claims 1-13 are believed to be allowable. Withdrawal of the rejection under 35 U.S.C. § 103(a) and allowance of claims 1-13 is respectfully requested.

B. Allowability of Independent Claim 14 and Dependent Claims 15-22

Claim 14 has been amended to further define the invention. The invention as defined by amended claim 14 requires, among other things, generating a patient context using a first application on a workstation, providing the patient context from the first application to a second application on the workstation and displaying a second set of patient data using the second application. As discussed in the specification, patient context information is shared between the first application and the second application operating on the workstation. The second application is configured to display patient data based on the patient context provided by the first application. Accordingly, the patient information system allows multiple applications residing on the same workstation or workstation network to exchange patient context data.

In contrast, Rock does not teach or suggest generating a patient context using a first application on a workstation, providing the patient context from the first application to a second application on the workstation and displaying a second set of patient data using the second application. Rather, Rock discloses a client application that sends a request to a server application to send digital medical image(s) associated with a medical study to the

client application. (Rock, col. 1, lines 48-62). The client application is used to display the digital medical image(s). The client application is on a client device and the server application is on a server device. The server application *locates* the requested medical study and *sends* a digital medical image to the client application which is used to display the digital medical image. (Rock, col. 2, lines 45-67).

Further, Wong also does not teach or suggest generating a patient context using a first application on a workstation, providing the patient context from the first application to a second application on the workstation and displaying a second set of patient data using the second application. While Wong does disclose a workstation in the context of a system and method for distributing medical images, Wong does not teach or suggest sharing patient context between a first application and a second application residing on the same workstation where the second application is configured to display patient data based on the patient context. Therefore, neither Rock nor Wong, either separately or together teaches or suggests generating a patient context using a first application on a workstation, providing the patient context from the first application to a second application on the workstation and displaying a second set of patient data using the second application. Accordingly, amended claim 14 is allowable over Rock in view of Wong.

Claims 15-22 depend from amended claim 14 and incorporate all of the limitations of amended claim 14 and are therefore allowable over Rock in view of Wong for, among other things, the same reasons as given above with respect to amended claim 14.

Accordingly, claims 14-22 are believed to be allowable. Withdrawal of the rejection under 35 U.S.C. § 103(a) and allowance of claims 14-22 is respectfully requested.

C. Allowability of Independent Claim 23 and Dependent Claims 24-31

Claim 23 has been amended to further define the invention. The invention as defined by amended claim 23 requires, among other elements, means for generating a patient context for a patient, means for providing the patient context from a first application to a second application , a means for receiving a second set of patient data based on the patient context and means for displaying the second set of patient data using the second application. As discussed in the specification, patient context information is shared between the first

application and the second application operating on a workstation. The second application is configured to display patient data based on the patient context provided by the first application. Accordingly, the patient information system allows multiple applications residing on the same workstation or workstation network to exchange patient context data.

In contrast, Rock does not teach or suggest an apparatus for integrating patient data from first and second applications including means for generating a patient context for a patient, means for providing the patient context from a first application to a second application , means for receiving a second set of patient data based on the patient context and means for displaying the second set of patient data using the second application. Rather, Rock discloses a client application that sends a request to a server application to send digital medical image(s) associated with a medical study to the client application. (Rock, col. 1, lines 48-62). The client application is used to display the digital medical image(s). The client application is on a client device and the server application is on a server device. The server application *locates* the requested medical study and *sends* a digital medical image to the client application which is used to display the digital medical image. (Rock, col. 2, lines 45-67).

Further, Wong also does not teach or suggest means for generating a patient context for a patient, means for providing the patient context from a first application to a second application , a means for receiving a second set of patient data based on the patient context and means for displaying the second set of patient data using the second application. While Wong does disclose a workstation in the context of a system and method for distributing medical images, Wong does not teach or suggest sharing patient context between a first application and a second application residing on a workstation where the second application is configured to display patient data based on the patient context. Therefore, neither Rock nor Wong, either separately or together teaches or suggests means for generating a patient context for a patient, means for providing the patient context from a first application to a second application , a means for receiving a second set of patient data based on the patient context and means for displaying the second set of patient data using the second application. Accordingly, amended claim 23 is allowable over Rock in view of Wong.

Claims 24-31 depend from amended claim 23 and incorporate all of the limitations of amended claim 23 and are therefore allowable over Rock in view of Wong for, among other things, the same reasons as given above with respect to amended claim 23.

Accordingly, claims 23-31 are believed to be allowable. Withdrawal of the rejection under 35 U.S.C. § 103(a) and allowance of claims 23-31 is respectfully requested.

2. Conclusion

In view of the foregoing amendments and remarks, favorable reconsideration and allowance of the application is respectfully requested. Should the Examiner have any remaining questions, the Examiner is invited to contact the undersigned at the telephone number appearing below.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.116-1.17, or credit any overpayment, to Deposit Account No. 07-0845.

Respectfully submitted,

Date 10/16/02

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

- ***Marked up version of the second full paragraph at page 4, lines 9-22*** *(which paragraph begins with "The patient data information system" and ends with "to the second application.")*:

The patient data information system of the present invention also provides a method of integrating patient data from first and second applications comprising displaying a first set of patient data using the first application and generating a patient context for that patient. The patient context from the first application is provided to a second application and [displaying] a second set of patient data from the second application is displayed. The method also includes retrieving the first set of patient data from an image data base and retrieving a second set of patient data from a Radiology Information System. The [method further includes the] step of providing further includes generating an event based on a patient context and providing the event to the second application for further processing. The method also includes converting the event obtained from a first object model to a second object model and providing the converted event to the second application.

- ***Marked up version of the second full paragraph at page 5, lines 8-9*** *(which paragraph begins with "Fig. 3 is a" and ends with "an exemplary embodiment;")*:

Fig. 3 is a block diagram illustrating the patient information data system architecture[;] according to an exemplary embodiment;

- ***Marked up version of the third full paragraph at page 5, lines 10-11*** *(which paragraph begins with "Fig. 4 is a" and ends with "an exemplary embodiment;")*:

Fig. 4 is a flow chart illustrating the process flow of the patient data information system[;] according to an exemplary embodiment;

- ***Marked up version of the first full paragraph beginning at page 6, line 4 and ending at page 7, line 2*** *(which paragraph begins with "The patient data information" and ends with "a DICOM gateway.")*:

The patient data information system (10) provides for integration between the applications residing on workstation (52) and third party applications residing on the same workstation or the network to which the workstation is coupled to improve work flow and

productivity of patient data information. During the treatment of a patient (P) a user, typically a radiologist, will log into a workstation to obtain patient information, usually textual data as well as image data. The user will manipulate or use that information and provide additional input based on observation and analysis relating to the treatment and care of the patient based on the patient data [(14)] made available on the information system. The present patient data information system (10) integrates the patient image data [(16)] with the patient textual data [(18] on the same workstation. The present patient data information system (10) provides the communication mechanism that allows different applications residing on the workstation or on the network to which the workstation is attached to share the context information. The system (10) includes a conduit that allows two-way patient context exchanges between the multiple applications residing on the same workstation or the same workstation network. The patient context [(12)]includes, for example, patient identification data [(20)], user identification data [(22)] and patient examination information [(24)], etc. Patient data [(14)] is obtained by inputting data, either textual [(18)] or image data [(16)] from the various modalities [in] to which a patient is subjected during a medical treatment. Such modalities can include magnetic resonance imaging (MRI) devices or ultrasound or computer tomology imaging (CT) devices or it can include data inputted with a word processing application. Such patient data [(14)] is stored in either the RIS data base (8) or the PACS data base (6) either directly through the PACS broker data base (11) or through a DICOM gateway.

- ***Marked up version of the first full paragraph at page 7, lines 3-20*** *(which paragraph begins with "The present patient data" and ends with "90 dots per inch (dpi).":*

Referring now to Figure 2, [The] the present patient data information system (10) comprises a display unit (50) which can include one or more high resolution monitors (54) (shown in Figure 1) coupled to a workstation (52). The workstation (52) is configured to operate a first software application (30) configured to display patient images [(16)], for a patient (P), on the display unit (50) upon request by a user via an input unit (56) coupled to the workstation (52). The first application (30) is configured to generate a patient context (12) for the patient (P) and provide the patient context (12) to a second software application (32). The second application (32) displays patient data [(14)] from the second application (32) based on the patient context (12). In this exemplary embodiment, the first application (30) is configured to retrieve patient image data [(16)] from a Picture Archival and

Communication System (PACS) database (6) [(5)] and the second application (32) is configured to retrieve patient textual data [(18)] from a Radiology Information System (RIS) data base (8) [(7)] wherein the patient data [(14)] includes the patient textual data [(18)]. As is mentioned above, the display unit (50) includes a monitor (54) (shown in Figure 1) having a resolution of at least 90 dots per inch (dpi).

- ***Marked up version of the second full paragraph beginning at page 7, line 21*** *(which paragraph begins with "During the process")* ***and ending at page 8, line 2*** *(which paragraph ends with "and a light pen (66), etc.")**:***

During the process of operating the patient data information system (10) the second application (32) is, for example, an RIS application, such as, a case sign out application [(34)], a report entry application [(36)], an order detailing application [(38)], an order viewer application [(40)], etc. Such applications are invoked by activating a command such as by "clicking" on an icon displayed in a graphic user interface on the monitor (54) (shown in Figure 1) of the display unit (50) of the workstation (52) as determined by the user of the patient data information system (10). The procedure can also be invoked by the user utilizing an input unit (56), for example, a mouse [(58)], a voice recognition system [(60)], a keyboard stroke [(62)], a switch [(64)], and a light pen [(66)], etc.

- ***Marked up version of the first full paragraph at page 8, lines 3-16*** *(which paragraph begins with "Upon logging onto" and ends with "to the PACS broker (9).":)*

Upon logging onto the workstation (52) or at another time during operation of system (10), a patient context (12) is created. The patient context (12) includes the patient identification data [(20)] such as name, address, age , social security number, etc., associated with a specific and particular patient (P). The patient context can also include user identification data [(22)] such as the name, password, etc., of the user of the patient data information system (10). In addition, the patient data includes patient examination information [(24)] such as ordered tests, test results, test analysis, prognosis, diagnostic information relating, etc., to that specific and particular patient (P). The first application (30) shares the patient context (12) with the second application (32). In the preferred embodiment, the first application (30) is in communication with the PACS data base (6) and the second

application (32) is in communication with the RIS data base (8), which databases (6, 8) are interconnected to the PACS broker (9).

- ***Marked up rewritten claims:***

1. (Once Amended) A patient data information system, comprising:

a display unit;

a first application configured to display patient images for a patient on the display unit and generate a patient context for the patient;

a second application; and

a workstation coupled to the display unit and configured to operate the first application and the second application, the first application configured to [generate a patient context for the patient,] provide the patient context to the second application[,] and the second application configured to display patient data [from the second application] based on the patient context.

14. (Once Amended) A method of integrating patient data from first and second applications operating on a workstation, comprising:

displaying a first set of patient data using the first application on the workstation;

generating a patient context for a patient;

providing the patient context from the first application to the second application;

receiving a second set of patient data based on the patient context [from the second application]; and

displaying the second set of patient data using the second application on the workstation.

23. (Once Amended) An apparatus for integrating patient data from first and second applications operating on a workstation, comprising:

a means for displaying a first set of patient data using the first application on the workstation;

a means for generating a patient context for a patient;

a means for providing the patient context from the first application to the second application;

a means for receiving a second set of patient data based on the patient context [from the second application]; and

a means for displaying the second set of patient data using the second application on the workstation.[.]

24. (Once Amended) The [method] apparatus of claim 23, further comprising a means for retrieving the first set of patient data from an image database.

25. (Once amended) The [method] apparatus of claim 24, further comprising a means for retrieving the second set of patient data from a radiology information system.

26. (Once Amended) The [method] apparatus of claim 23, wherein the patient context includes the means for identifying a patient.[.]

27. (Once Amended) The [method] apparatus of claim 23, wherein the means for providing includes a means for generating an event based on the patient context and providing the event to the second application.

28. (Once Amended) The [method] apparatus of claim 27, further comprising a means for converting the event from a first object model to a second object model and a means for providing the converted event to the second application.

29. (Once Amended) The [method] apparatus of claim 23, wherein the second application is selected from the group consisting of a case signout application, a report entry application, an order detailing application, and an order viewer application.

30. (Once Amended) The [method] apparatus of claim 23, further comprising a means for receiving an operator input and generating the patient context for the patient in response to the operator input.

31. (Once Amended) The [method] apparatus of claim 23, wherein the second set of patient data includes a means for providing patient examination information.